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# State of Utah

## DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

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August 6, 1990

TO: Board of Oil, Gas and Mining

THRU: Lowell P. Braxton, Associate Director

THRU: D. Wayne Hedberg, Permit Supervisor

FROM: Holland Shepherd, Reclamation Specialist

RE: Surety Release, Carr Fork Mine, Anaconda Company, (ARCO Coal Company), M/045/004, Tooele, County, Utah

The Division recommends surety and reclamation release for The Anaconda Company and parent company, Atlantic Richfield Company, regarding the Carr Fork mine site. Carr Fork was operated by what was once Anaconda Copper Company. ARCO assumed responsibilities of the Carr Fork site after The Anaconda Company merged into its parent corporation Atlantic Richfield Company (ARCO) in December of 1981. Anaconda Minerals Company was formed by ARCO and later dissolved in early 1989.

The Division currently holds a \$200,000 Board Contract with The Anaconda Company, approved August 20, 1980, for the Carr Fork property (see attached). According to the operator, it required \$3,136,496 to reclaim the 532 acre site.

An unusual request was made by the operator in regard to the reclamation to be performed on this site. The operator proposed that both the Carr Fork site and the old pre-law IS&R (International Smelting and Refining) properties be included in the Mining and Reclamation Plan, and that DOGM address comments to both sites. The IS&R site was not originally covered by the Board Contract. The request was made to alleviate the concerns of the Department of Environmental Health and EPA regarding hazardous materials from the site. By reclaiming the site in its entirety, Anaconda hoped to reduce, substantially, discharges into the air, surface water and ground water of heavy metals.

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Originally, the Carr Fork mine included Pine Canyon. The Pine Canyon portion has since been assumed by Kennecott Utah Copper and is currently under reclamation.

The Carr Fork and IS&R sites were reclaimed by Anaconda during the summer and fall of 1986. Containerized stock plantings were completed in the spring of 1987. Three years have transpired since the site was reclaimed during which surface conditions have been monitored by Anaconda on an annual basis. Also, three years marks the regulatory requirement for observing plant community success.

Overall, an excellent plant cover has been achieved on the site. A few small areas remain devoid or sparsely covered, but these are insignificant when evaluating the site as a whole. Monitoring of surface water constituents produced no evidence of high metals loading or other problem constituents. Ground water was not monitored by the operator.

Please find attached the following:

1. August 1980 Board Contract
2. Executive Summary, update 8-6-90
3. Location map
4. Larger scale site facilities map

jb  
Attachments  
MNM045004.2

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
BOARD OF OIL, GAS, AND MINING  
1588 West North Temple  
Salt lake City, utah 84116

\* MINED LAND RECLAMATION CONTRACT \*

THIS CONTRACT, made and entered into this 20th day of August, 1980, between The Anaconda Company a corporation duly authorized and existing under and by virtue of the laws of Delaware, and hereinafter called the Operator, and the Board of Oil, Gas, and Mining, duly authorized and existing by virtue of the laws of the State of Utah, hereinafter called the Board.

WITNESSETH:

WHEREAS, the Operator is the owner and in possession of certain mining claims and/or leases hereinafter more particularly mentioned and described in Exhibit "A" attached hereto.

WHEREAS, the Operator did on the 8th day of March, 1977, file with the Division of Oil, Gas, and Mining, a "Notice of Intention to Commence Mining Operations" and a "Mining and Reclamation Plan" to secure authorization to engage, or continue to engage, in mining operations in the State of Utah, under the terms and provisions of the Mined Land Reclamation Act, Title 40 Chapter 8, Utah Code Ann., 1953.

WHEREAS, the Operator is able and willing to reclaim the above mentioned lands in accordance with the approved mining and reclamation plan, the Mined Land Reclamation Act and the rules and regulations adopted in accordance therewith.

Approved as to Legal  
Considerations

Date 7/25/80

Rv



WHEREAS, the Board has considered the factual information and recommendations provided by the staff of the Division of Oil, Gas, and Mining as to the magnitude, type and costs of the approved reclamation activities planned for the land affected.

WHEREAS, the Board is cognizant of the nature, extent, duration of operations, the financial status of the Operator and his capabilities of carrying out the planned work.

NOW THEREFORE, for and in consideration of the mutual covenants of the parties by each to the other made and herein contained, the parties hereto agree as follows:

AGREEMENT

The Operator agrees:

1. To reclaim the land affected by mining activities in accordance with the Operator's mining and reclamation plan as approved by the Board on MARCH 26, 1980, the Mined Land Reclamation Act and its regulations adopted under such Act.

2. To conduct experimental reclamation studies during the period 1980 through 1985 implementing best available technology for reclamation of land impacted by mining and processing operations.

3. To apply results obtained from the experiments conducted under paragraph 2 above, and the latest technology available, for reclamation of areas disturbed by mining and processing operations upon abandonment of the operations. Approximately 500 acres will be reclaimed upon abandonment.

A minimum of \$200,000 in 1980 dollars shall be expended upon abandonment for implementing and establishing the reclamation program and desired vegetative cover, respectively.

4. The above experimental and final reclamation efforts will be conducted pursuant to a commitment of the Operator to complete mined land reclamation as required by the Notice of Intention to Mine, the Mined Land Reclamation Act and implementing regulations.

5. The Operator agrees to provide to the Board and Division annually, a detailed report of the results of experimental reclamation of work performed during the preceding year, including an estimate of costs incurred for such experimental reclamation work expressed in 1980 dollars.

6. The Operator agrees to discuss the results of the previous year's experimental reclamation work with the Division in order to establish annual reclamation plans for the forthcoming year.

7. The Operator further agrees to work jointly with the Division in establishing annual reclamation plans for final reclamation work.

8. The Operator agrees to designate a responsible individual who is involved in the Operator's on-going experimental and final reclamation efforts, who will serve as liaison to the Division.

9. This contract shall be binding on all successors and assigns, to the Operator.

10. The Operator shall be an independent contractor and as such shall have no authorization to bind the State of Utah or the Board or Division of Oil, Gas, and Mining to any agreement except as herein set forth.

11. The Operator agrees to hold harmless the State of Utah and the Board and Division of Oil, Gas, and Mining from claims for personal injury or death, damages to personal property and liens of workmen and materialmen, howsoever caused, in performance of this contract.

The Board Agrees as Follows:

1. In lieu of accepting a bond or surety, the Board agrees to accept the Operator's personal guarantee as set forth in this contract, to reclaim the land affected in accordance with its approved reclamation plan.

2. This Contract shall fulfill the Operator's requirements under Section 40-8-14, Utah Code Annotated and Rule M-5 of the Board's Regulations.

#### TERMINATION

The Operator and the Board agree to terminate this Contract as follows:

1. This Contract shall terminate upon successful completion of final reclamation work on the affected lands.

2. If, through any cause, the Operator fails to fulfill in a timely and proper manner, obligations under this Contract, the Board or Division may give written notice to the Operator of such failure. Thereafter, the Operator shall have sixty



(60) days in which to remedy any such deficiencies. If at the end of such sixty day period the Operator has not remedied the deficiencies or made good faith efforts to remedy the deficiencies, the Operator shall be deemed to be in violation of the Mined Land Reclamation Act and this Contract and the board may initiate proceedings to terminate this Contract and the approved Notice of Intent to mine.

REVISION

1. This Contract is subject to amendment or revision to reflect future changes in the Mined Land Reclamation Act or its implementing regulations.

IN WITNESS THEREOF, the parties hereto set their hands this 20th day of August, 1980.

BOARD OF OIL, GAS, AND MINING

By C. P. Henderson

OPERATOR

By A. H. Ditto  
A. H. Ditto

Its Carr Fork, General Manager

CORPORATE ACKNOWLEDGMENT

STATE OF UTAH                                 )  
  ) ss.  
COUNTY OF Tooele                         )

On this 20<sup>th</sup> day of August, 1980, personally  
appeared before me A. H. Ditto, who by me duly  
sworn did say that he is the <sup>General</sup>Manager, Carr Fork of  
Anaconda Copper company and that the foregoing  
instrument was signed on behalf of said corporation by authority  
of a corporate resolution, and said Manager  
acknowledged to me that said corporation executed the same.

Notary Public: Nancy P. Stookey

Residing: Grantville, Utah

My Commission Expires:

1/12/83



**EXECUTIVE SUMMARY**

**THE ANACONDA CORPORATION**  
(Atlantic Richfield Company)

Carr Fork Project  
M/045/004  
Tooele County, Utah

Updated  
8-6-90

### GENERAL:

After spending \$200 million on the development of the Carr Fork mine, the Anaconda Corporation started shipping copper concentrate from renovated mine workings and facilities near Tooele, Utah in August 1979. In November of 1981, operations were suspended as a result of a copper slump in the market and numerous technical problems encountered by the mine operator. The mine was eventually reclaimed in the summer and fall of 1986.

### LOCATION:

The underground mining operation and mill were located in Pine Canyon, a steep, narrow canyon draining a portion of the west flank of the Oquirrh Mountains. The hoist facilities were located approximately 1 1/2 miles west of the Bingham Canyon Copper Pit.

### SIZE:

Total disturbed acreage 550 acres. This acreage includes pre-law disturbance on the old IS&R properties. 17.3 acres were purchased by Kennecott in September of 1985, and 532 acres were reclaimed in 1986 by Anaconda.

### SOILS AND GEOLOGY:

Soils tend to be relatively shallow and poorly developed.

The Carr Fork ore deposits lie under the western flank of the Oquirrh Mountains at a depth of 2,000 to 6,000 feet. The ore is a skarn formed in two limestone units enclosed by quartzites, all of which are Pennsylvanian in age.

The orebodies have an average overall dimension of approximately 2,950 feet by 3,000 feet and show exceptional continuity, with few unmineralized zones within the presently defined boundaries. The two mineralized limestone beds range in thickness from about 80 to 250 feet.

Dips range from vertical to 20 degrees and the strike varies from east-west to northeast-southwest. Hangingwall and footwall rocks are generally unmineralized quartzites, with the exception of some minor areas of copper mineralization in the hangingwall. The ore is moderately hard and tough, while the waste rock is hard, brittle and fractured.

The mine's surface facilities are located within Pine Canyon on alluvial and colluvial deposits. A tailings dam was constructed on the alluvial fan at the mouth of the canyon.

#### HYDROLOGY:

The area is subject to extensive snowfall and summer thunderstorm events. The surface facilities in the bottom of Pine Canyon were protected by a massive diversion system.

Mine water was pumped from underground and transported to settling ponds near the tailings pond through a concrete flume and ditch. Effluent from the settling ponds was used by local farmers for irrigation.

The groundwater table within Tooele Valley is located approximately 650 feet below the tailings pond.

#### ECOLOGY:

The canyon walls are sparsely vegetated with Pinion-Juniper, maple and elderberry. Grass understory consists of ragweed, gum weed, sunflowers, wheatgrass, squirrel tail grass, wild rye, wild lettuce, tall native blue grass, rabbitbrush and herbaceous aster, according to Anaconda.

Due to past smelting activities at the canyon mouth, vegetation is very sparse on the canyon slopes. A distinct plume imprint can be seen, at a distance, marking the area of most concentrated sulfur dioxide impacts on local vegetation. Anaconda has since reclaimed much of the area in 1986. As a result, the canyon floors have a thick vegetation cover.

#### STRUCTURES AND FACILITIES:

Four shafts were in use, three of which reached the surface. Tailings were contained in a 7,700 foot long by 54 foot starter embankment. Approximately 550 acres of land surface were affected.



MINING AND RECLAMATION PLAN:

Anaconda committed to the following items in their Mining and Reclamation Plan:

SUMMARY OF RECLAMATION COMMITMENTS

- A. Useable building were removed when operations were permanently terminated. All trash, scrap metal and other debris were property disposed of.
- B. Tests were conducted to determine the best revegetation procedures for the various disturbed areas.
- C. Mine waste was disposed of in stable dumps.
- D. Disturbed areas were revegetated where such revegetation was technically and economically feasible.
- E. All diversion structures were designed as maintenance free facilities.
- F. The mine water settling ponds were reclaimed.
- G. Plant species, seedings and planting rates, soil amendments and revegetation techniques were approved by the Division prior to termination of mining. Selection of the above were based upon up-to-date technology, research and Anaconda's test plots.
- H. Disturbed areas not directly required for mining operations were promptly revegetated with grasses, shrubs and forbs.
- I. All roads not required for a documented and approved post mining use were obliterated and the affected area revegetated.
- J. Reclamation practices continued until revegetaion reached the surface cover standard of Rule M(12), or within 70% of native adjacent cover.

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Executive Summary  
Carr Fork  
M/045/004  
August 6, 1990

SURETY:

The Board executed a surety contract with The Anaconda Company for \$200,000, effective August 20, 1980.

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MNM045004.3

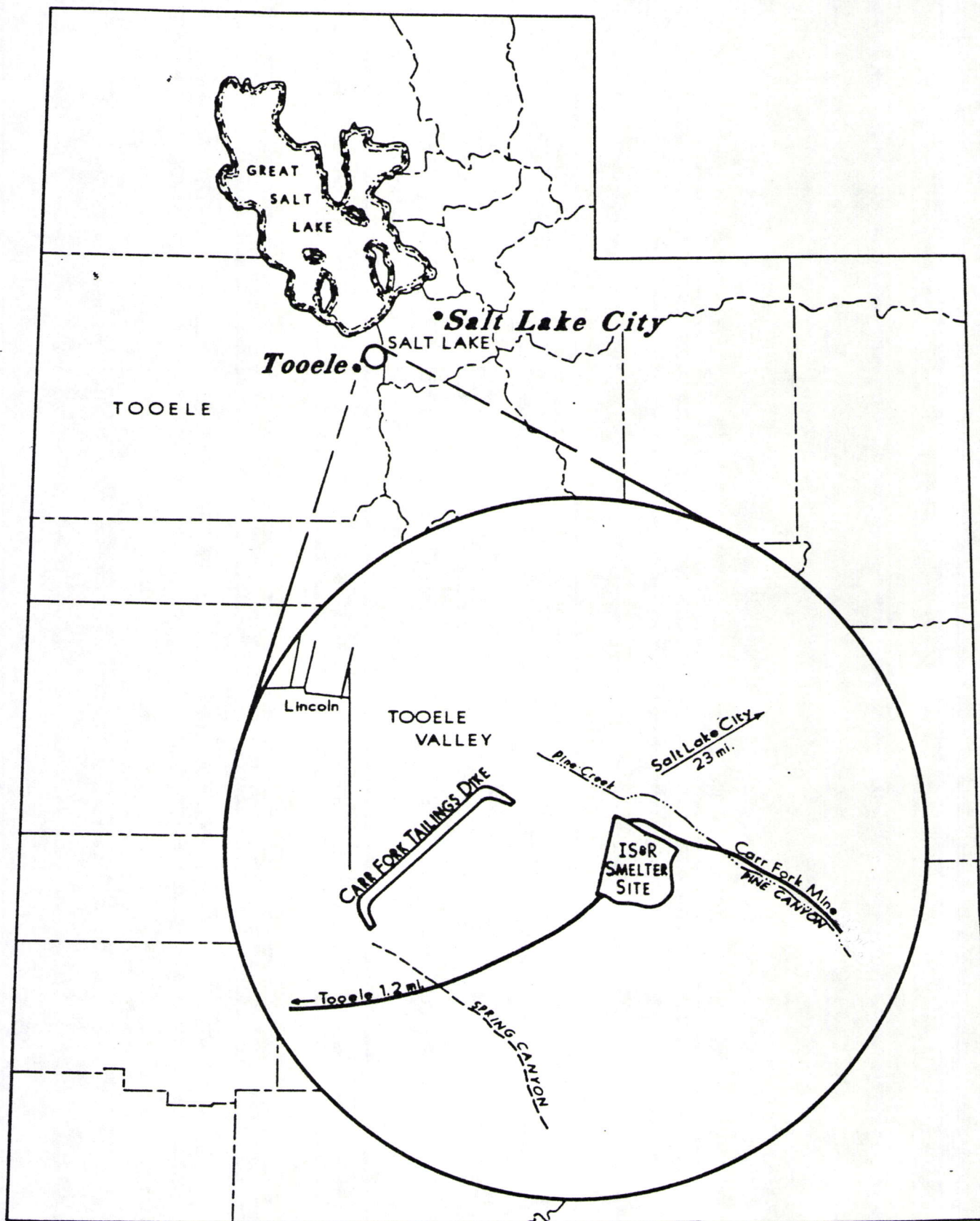


Figure 1.1-1 Location map.



THE TOOEELE COPPER AND LEAD SMELTER

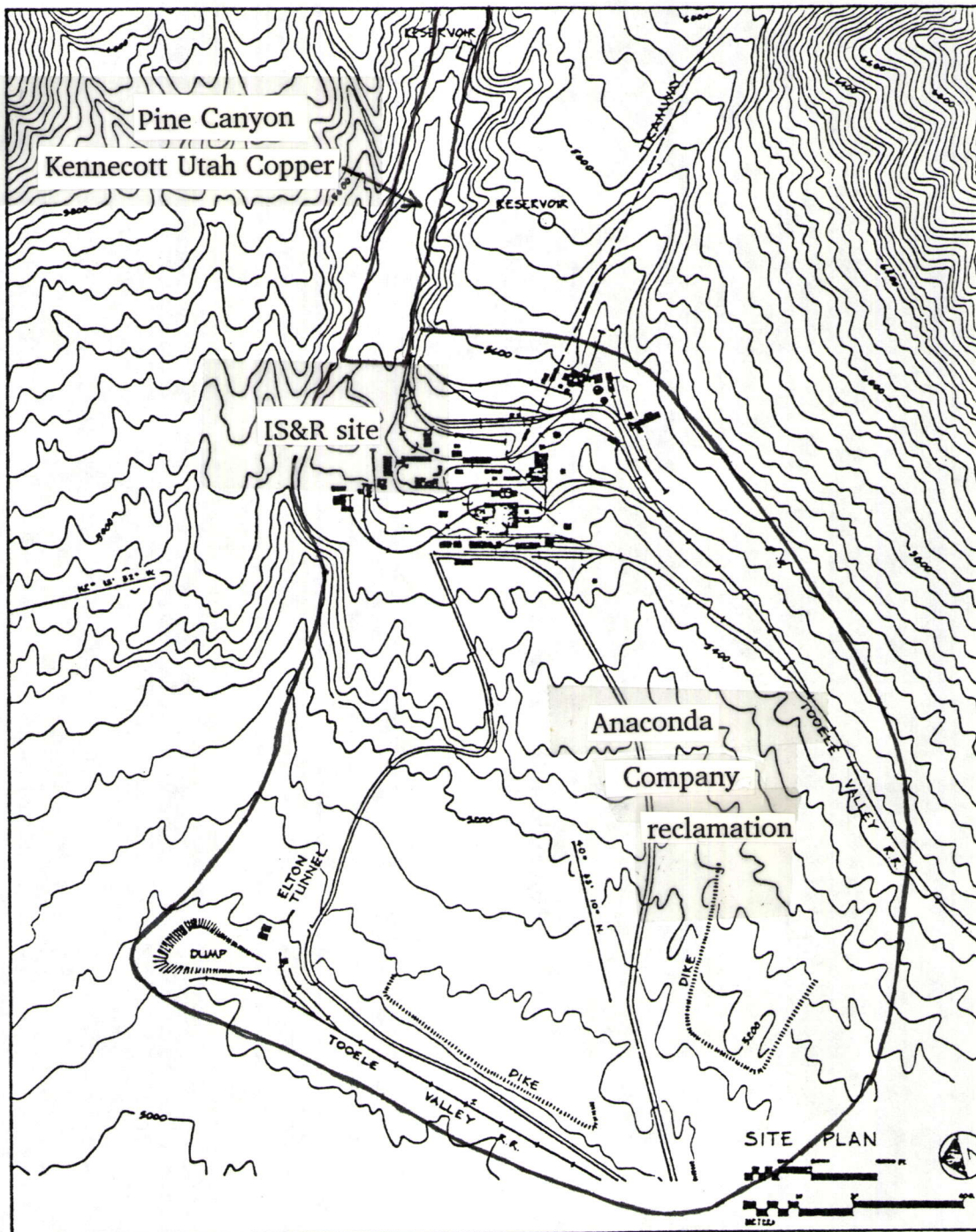


Figure 2 Site plan. (Drawing by the Utah Summer Survey Team, HAER.)